#### **ENVIRONMENTAL CHEMISTS**

Date of Report: October 29, 1996 Date Received: October 24, 1996

Project: Metro Self Monitor, PO #M73117 Date Samples Extracted: October 24, 1996 Date Extracts Analyzed: October 28, 1996

## RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR CHROMIUM, COPPER, NICKEL, AND ZINC USING METHOD 6010

### Samples Processed Using Method 3005A Results Reported as mg/L (ppm)

Sample ID	Chromium	Copper	<u>Nickel</u>	<u>Zinc</u>
M73117	0.50	0.34	0.46	0.08
Method Blank	< 0.05	<0.05	<0.05	< 0.05

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## QUALITY ASSURANCE RESULTS FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 73510 (Duplicate)

	Reporting	Sample	Duplicate	Relative Percent	Acceptance
Analyte:	Units	Result	Result	Difference	Criteria
Chromium	mg/L (ppm)	0.50	0.48	4	0-20
Copper	mg/L (ppm)	0.34	0.32	6	0-20
Nickel	mg/L (ppm)	0.46	0.43	7	0-20
Zinc	mg/L (ppm)	0.08	0.07	13 a	0-20

Laboratory Code: 73510 (Matrix Spike)

Analyte:	Reporting Units	Spike Level	Sample Result	% Re MS	ecovery MSD	Acceptance Criteria	Relative Percent <u>Difference</u>
Chromium	mg/L (ppm)	5	0.50	92	92	80-120	0
Copper	mg/L (ppm)	5	0.34	90	88	80-120	2
Nickel	mg/L (ppm)	10	0.46	93	95	80-120	2
Zine	mg/L (ppm)	5	0.08	99	99	80-120	0

Laboratory Code: Spike Blank

Analyte:	Reporting Units	Spike Level	% R MS	ecovery MSD	Acceptanc Criteria	Relative e Percent Difference
Chromium	mg/L (ppm)	5	98	99	80-120	
Copper	mg/L (ppm)	5	96	94	80-120	2
Nickel	mg/L (ppm)	10	99	100	80-120	1
Zinc	mg/L (ppm)	5	104	103	80-120	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

SAMPLE CHAIN OF CUSTODY

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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Beth M. Albertson, M.S. Bradley T. Benson Kelley D. Wilt 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044

October 29, 1996

### INVOICE # 96ACU1029-2 DUPLICATE COPY

Accounts Payable Alaskan Copper Works 628 South Hanford Seattle, WA 98134

RE: Project Metro Self Monitor, PO #M73117: Results of testing requested by Gerry Thompson, Project Manager for material submitted on October 24, 1996.

1 water sample analyzed for Chromium, Copper, Nickel, and Zinc using Method 6010 @ \$65 per sample \$ 65.00

Amount Due \$ 50.00

ALASKAN COPPER

MAINTENANCE WORK ORDER

WORK ORDER#: RMC16203 CFT/SKILL: 02-MECHANICAL CATEGORY: 02-SCHEDULE ORIG: KEITH HOWELL 145PM TEL#: APPV'D: EQUIPMENT#: 3563 DEPARTMENT: 18 ACCOUNT#: 3563 BUILDING : 4700 AREA/ROOM : MACH IS DOWN: NO SUPV : RL - LOHSE, RON EMPL#2: EMPL#3: EMPL#1:/ PR'TY: ALT: REASON: STAT: OREN DATE - OPEN: 10-31-96 REL'SE: 10-31-96 SCHD: 10-31-96 CLSD: EST. - HRS: 3.00 MAT'L: 0.00 SUB: ACT. - HRS: 0.00 MAT'L: 0.00 SUB: 0.00 TOT'L: 135.00 SUB: TOT'L: 0.00 0.00 TYPE/CODE OF WORK WORK : GENERAL SUPPORT @ 4700 DRAIN WASTE OIL FROM CONTAINER, SEE REQUIRED TO : KEITH FOR MORE INFO. BE GENERAL SUPPORT DONE TIME TO COMPLETE: DATE: PERFORMED BY: ACCEPTED BY:

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Beth M. Albertson, M.S. Bradley T. Benson Kelley D. Wilt 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044

October 29, 1996

Gerry Thompson, Project Manager Alaskan Copper Works 628 South Hanford Seattle, WA 98134

Dear Mr. Thompson:

Enclosed are the results from the testing of material submitted on October 24, 1996 from your Metro Self Monitor, PO #M73117 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson Chemist

keh

Enclosures ACU1029R.DOC